

微生物必需基因的理论研究现状

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摘要 必需基因是生物体在优化条件下生长不可缺少的基因。近年来,对必需基因的研究已逐渐成为微生物学、基因组学和生物信息学研究领域的热点。文章首先描述了已经实验确定必需基因的微生物物种。然后,对必需基因的理论研究现状进行了综述。从进化保守性和序列组成两方面比较必需基因和非必需基因的差异,到必需基因的理论预测及必需基因在染色体上的分布等。最后,对这一重要研究领域的进展进行了总结和展望。

关键词: 必需基因 进化率 理论预测 染色体分布

Abstract: Essential genes are indispensable for the survival of an organism in optimal conditions. Recently, study on essential gene is becoming a hot topic of microbiology, genomics, and bioinformatics. This paper described the experiments that determined essential genes in some microbes and the theoretical researches on essential genes were reviewed. The major content contained comparison of essential genes and non-essential genes based on information on evolutionary conservation and sequence composition, and *in silico* prediction of essential genes, and analysis of the chromosomal distributions of essential genes. Finally, related progresses were concluded and the open problems were pointed out.

Keywords: essential genes, evolution rate, theoretical prediction, chromosomal distribution

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